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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/089,956	04/04/2002	Junichi Yamaura	10059-416US(P26235-01)	1124

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EXAMINER

CANTELMO, GREGG

ART UNIT PAPER NUMBER

1745

DATE MAILED: 04/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/089,956

Applicant(s)

YAMAURA ET AL.

Examiner

Gregg Cantelmo

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date April 4, 2002.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

2. The information disclosure statement filed April 4, 2002 has been placed in the application file and the information referred to therein has been considered as to the merits.

### ***Drawings***

3. The drawings received April 4, 2002 are acceptable for examination purposes.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-288705-A (JP '705).

JP '705 discloses a negative electrode comprising: carbon material having irreversible capacity during the initial charge and discharge and  $\text{Li}_{3-x}\text{M}_x\text{N}$  wherein N is at least one selected

from the group consisting of Co, Ni, Mn and Cu and wherein  $0.2 \leq x \leq 0.8$  (abstract, paragraph [0012] and paragraph [0017] as applied to claim 1).

The lithium-containing complex is  $\text{Li}_{2.6}\text{Co}_{0.4}\text{N}$  (paragraph [0017] as applied to claim 2).

The negative electrode is employed in a battery comprising a positive electrode comprising a lithium-containing complex oxide (paragraph [0014]) and a non-aqueous electrolyte (paragraph [0016] as applied to claim 6).

The difference between claim 1 and JP '705 is that JP '705 does not teach of 100 parts by weight of carbon and 20-150 parts by weight of lithium-containing complex nitride.

By example, JP '705 teaches of 87:5 parts carbon to lithium lithium-containing complex nitride (paragraph [0017]). This mixture provides for a capacity of 57-56 mAh as shown in Table 1 and that mixing the carbon and lithium-containing complex nitride can control the irreversible capacity.

The instant application teaches that the capacity for the various mixtures of carbon to lithium-containing complex nitride is at least 50 mAh (see Tables 1 and 2). As can be seen in JP '705 the prior art mixture of 87:5 also achieves the same improved capacity. Therefore the variance in ranges between the instant claims and the teachings of JP '705 are not held to be critical differences since both ranges achieve the same capacity characteristics.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of JP '705 by varying the ratio of carbon to lithium-containing complex nitride to any number of ratios so long as the mixture ratio provided for the an improved capacity as shown in Table 1. Generally, differences in ranges will not support the patentability of subject matter encompassed by the prior art unless there is evidence

indicating such ranges is critical. In re Boesche, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969). It has been held that when the difference between a claimed invention and the prior art is the range or value of a particular variable, then a prima facie rejection is properly established when the difference in the range or value is minor. Titanium Metals Corp. of Am. v. Banner, 778 F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985).

6. Claims 3-5 rejected under 35 U.S.C. 103(a) as being unpatentable over JP '705 as applied to claims 1 above, and further in view of JP 09-235111-A (JP '111).

The differences not yet discussed are of the carbon material being a low crystalline carbon (claim 3) in fibrous form having a mean fiber diameter of 1-50 microns and mean fiber length of 10-200 microns (claim 4), of the carbon being amorphous carbon (claim 5).

JP '111 discloses providing a low crystalline carbon as a negative electrode material wherein the carbon is in fibrous form having a mean fiber diameter of 1-20 microns (paragraph [0032]) and a mean fiber length of 100, 50 or 30 microns (paragraph [0030] as applied to claims 3 and 4). The carbon is amorphous (Field of Invention as applied to claim 5).

The motivation for using the carbon material of JP '111 in a negative electrode is that it improves the charge and discharge capacity of the negative electrode.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of JP '705 by using the carbon material of JP '111 in a negative electrode since it would have improved the charge and discharge capacity of the negative electrode.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is (571) 272-1283. The examiner can normally be reached on Monday to Thursday from 9 a.m. to 6 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. FAXES received after 4 p.m. will not be processed until the following business day. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gregg Cantelmo  
Primary Examiner  
Art Unit 1745

gc



April 20, 2004